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Task 1:

Part 1 (Python):

Q1:

- 1-Enter Your Value
- 2- computes the value of a+aa+aaa+aaaa
- 3-print the result

Q2:

- 1- we Use timeit() function to measure the running time.
- 2- print the time.

Q3:

- 1- We imoport itemgetter, attrgetter libraries.
- 2- Initialize arraya to store data
- 3- Create the table (name, age, height)
- 4- Sort the table by name then age then score and print it.

Q4:

- 1-Function to count character frequency.
- 2-Print character frequency.

Q5:

- 1- Initialize length of string
- 2- Function to add

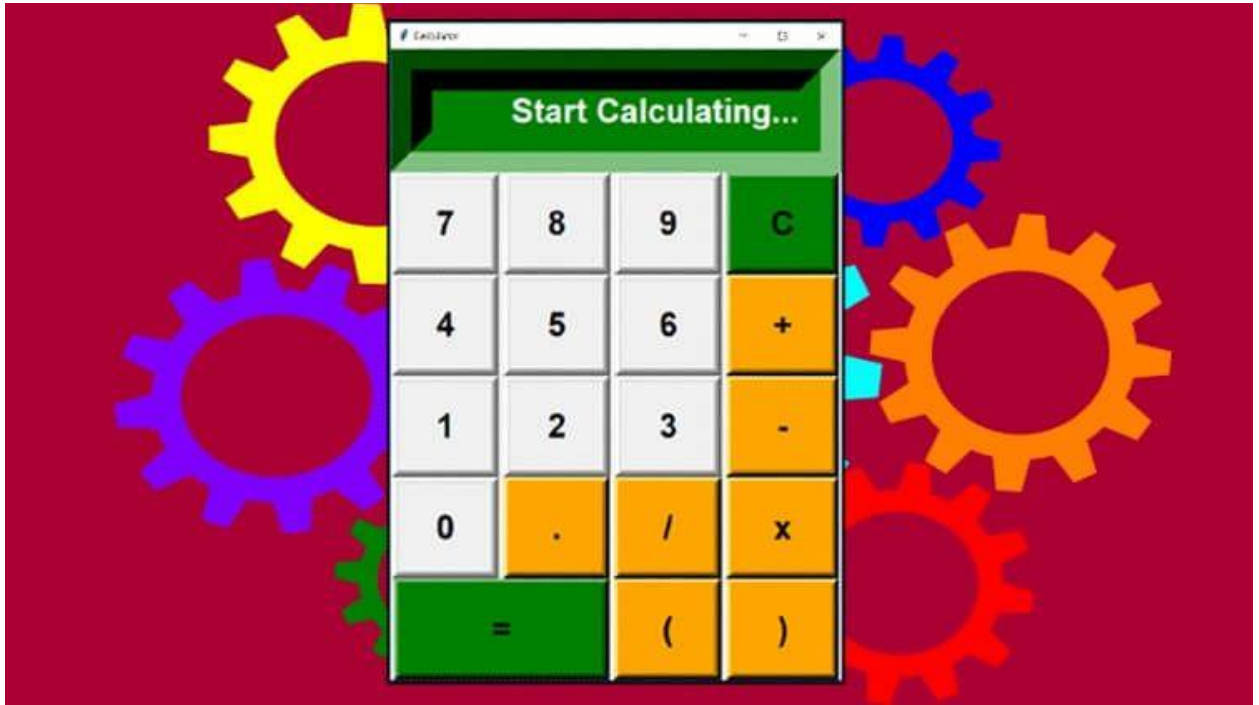
```
if length > 2:
    if str1[-3:] == 'ing':
        str1 += 'ly'
    else:
        str1 += 'ing'
```

```
return str1
```

Q6:

- 1-import datetime

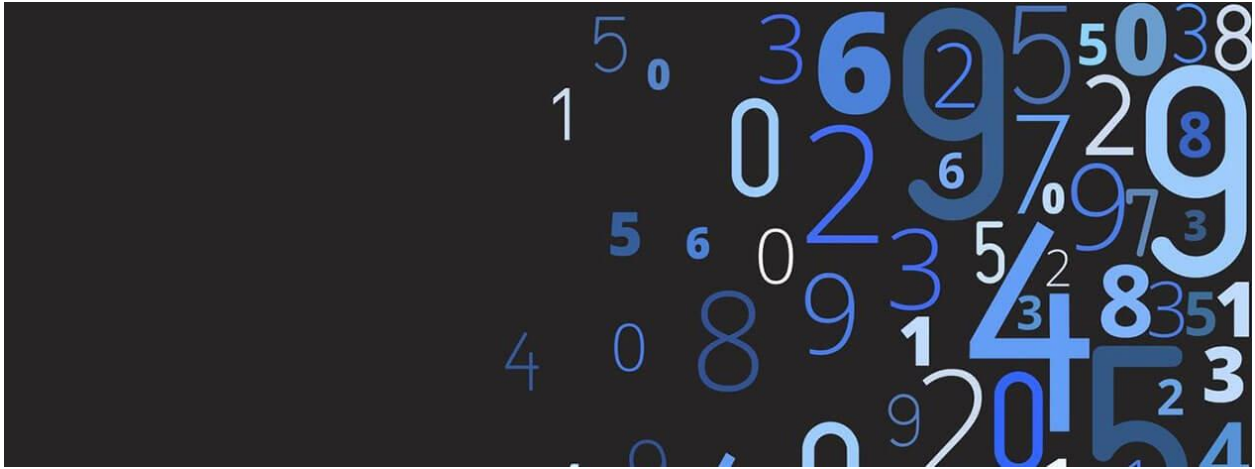
Part2(GUI):



- 1- import everything from tkinter module
- 2- Function to update expression
- 3- concatenation of string
- 4- Function to evaluate the final expression
- 5- Try block for exceptions
- 6- Function to clear the contents
- 7- create a GUI window
- 8- set the background color
- 9- set the title
- 10- create Buttons
- 11- RUN

Task 2:

Digit Recognizer



Description: Classification of handwritten digits, 10 classes (0–9). Given a dataset of labeled handwritten images, build a classifier that would assign correct labels to the new (not seen by the model) images.

- 1-Import libraries.
- 2-Loading Data.
- 3-Plot frequency.
- 4-Training our module and find what is its efficiency.

Task 3:

Fake and Real News



INTRODUCTION

Fake News is a serious issue. It is resulting in many illegal and dangerous activities. From Facebook to YouTube there are mountains of these fake news.

OBJECTIVE

The main objective is to detect the fake news, which is a classic text classification problem with a straightforward proposition. It is needed to build that can differentiate between "Real" news and "Fake" news.

1-Using Fake News Classifier:

Table of Contents

- 1-Import of general libraries
- 2- Reading of Data
- 3- Labeling of each rows
- 4- A look over data
- 5- Added both data frames
- 6- Shuffled for a unbiased result
- 7- Defined Y (output column)
- 8- Using the Count Vectorizer with copied data
- 9- Test Train Split
- 10-Use of Multinomial NB Classifier
- 11- Use of Passive Aggressive Classifier

RESULTS:

Not much difference, but in lot of places Multinomial NB Classifier works better than Passive Aggressive.

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